

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims

1- 19. (Canceled)

20. (New) An image compression encoding apparatus to compression encode an image signal, comprising:

selecting means for selecting between a first compression system, which conducts quantization with different quantization steps, and a second compression system having a compression factor and loss which are less than the compression factor and the loss of the first compression system, on the basis of a smaller code quantity of a selection unit of each system and outputting a selection signal;

switching means for switching between the code quantity of the first compression system and the code quantity of the second compression system to deliver the corresponding code quantity according to the said select signal outputted by the said selecting means; and

calculation processing means for:

adding, on an encoding system selection unit basis, the code quantities according to the switching means to accumulate total code quantity of one equi-length unit; and

specifying a first total code quantity that is the minimum code quantity among total code quantities which exceed the target code quantity for every one of the

quantization steps of the first encoding system, based on the said calculated total code quantity and the target total code quantity of one equi-length unit;

specifying a second total code quantity that is the maximum code quantity among total code quantities less than the target code quantity for every one of the quantization steps of the first encoding system, based on the said calculated total code quantity and the target total code quantity of one equi-length unit;

comparing, on an encoding system selection unit basis, said code quantity of second compression system with assigned code quantity which is calculated by using said first and second total code quantity through linear interpolation, and outputting select signal that selects encoding system with smaller code quantity; and

encoding means for encoding image signals using the compression system selected based on the assigned code quantity and the select signal outputted by said calculation processing means from one of:

a first path which uses first compression system with quantization step determined by said assigned code quantity; and

a second path which uses second compression system with less loss.

21. (New) The image compression encoding apparatus as set forth in claim 1,

Wherein the first compression system is a system of performing DCT of the image signal to quantize the image signal which has been caused to undergo DCT, and

wherein the second compression system is a reversible encoding system.

22. (New) An image compression encoding method for compression encoding an image signal, comprising the steps of:

selecting between a first compression system, which conducts quantization with different quantization steps, and a second compression system having a compression factor and loss which are less than the compression factor and the loss of the first compression system, on the basis of a smaller code quantity of a selection unit of each system and outputting a selection signal;

switching between the code quantity of the first compression system and the code quantity of the second compression system to deliver the corresponding code quantity according to the said select signal outputted by the selecting step; and

adding, on an encoding system selection unit basis, the said code quantities according to the said switching step to thereby accumulate total code quantity of one equi-length unit; and

specifying a first total code quantity that is the minimum code quantity among total code quantities which exceed the target code quantity for every one of the quantization steps of a first encoding system, based on the said calculated total code quantity and the target total code quantity of one equi-length unit;

specifying a second total code quantity that is the maximum code quantity among total code quantities less than the target code quantity for every one of the quantization steps of the first encoding system, based on the said calculated total code quantity and the target total code quantity of one equi-length unit;

comparing, on an encoding system selection unit basis, said code quantity of second compression system with assigned code quantity which is calculated by using said first

and second total code quantity through linear interpolation, and outputting select signal that selects encoding system with smaller code quantity; and

encoding image signals using the compression system selected based on the assigned code quantity and the select signal outputted from one of:

a first path which uses first compression system with quantization step determined by said assigned code quantity; and

a second path which uses second compression system with less loss.

23. (New) A computer program embodied in a computer-readable medium for controlling a computer to execute an image compression encoding method for compression encoding an image signal comprising the steps of:

selecting between a first compression system, which conducts quantization with different quantization steps, and a second compression system having a compression factor and loss which are less than the compression factor and the loss of the first compression system, on the basis of a smaller code quantity of a selection unit of each system and outputting a selection signal;

switching between the code quantity of the first compression system and the code quantity of the second compression system to deliver the corresponding code quantity according to the said select signal outputted by the selecting step; and

adding, on an encoding system selection unit basis, the said code quantities according to the said switching step to thereby accumulate total code quantity of one equi-length unit; and

specifying a first total code quantity that is the minimum code quantity among total code quantities which exceed the target code quantity for every one of the quantization steps of a first encoding system, based on the said calculated total code quantity and the target total code quantity of one equi-length unit;

specifying a second total code quantity that is the maximum code quantity among total code quantities less than the target code quantity for every one of the quantization steps of the first encoding system, based on the said calculated total code quantity and the target total code quantity of one equi-length unit;

comparing, on an encoding system selection unit basis, said code quantity of second compression system with assigned code quantity which is calculated by using said first and second total code quantity through linear interpolation, and outputting select signal that selects encoding system with smaller code quantity; and

encoding image signals using the compression system selected based on the assigned code quantity and the select signal outputted from one of:

a first path which uses first compression system with quantization step determined by said assigned code quantity; and

a second path which uses second compression system with less loss.